Evaluation of Advanced Access in the National Primary Care Collaborative

Mark Pickin, Alicia O'Cathain, Fiona C Sampson and Simon Dixon

SUMMARY

Background: *An aim of the National Primary Care Collaborative is to improve quality and access for patients in primary care using principles of Advanced Access.*

Aims: *To determine whether Advanced Access led to improved availability of appointments with general practitioners (GPs) and to examine GPs' views of the process.*

Design: *Observational study.*

Setting: *Four hundred and sixty-two general practices in England participating in four waves of the collaborative during 2000 and 2001.*

Method: *Regression analysis of the collaborative's monthly data on the availability of GP appointments for the 352 practices in waves 1–3, and a postal survey of lead GPs in all four waves. The main outcome measures were the change in mean time to the third available appointment with GPs, and the proportion of GPs thinking it worthwhile participating in the collaborative.*

Results: *The time to the third available appointment improved from a mean of 3.6 to 1.9 days, difference = 1.7 days, 95% confidence interval (CI) = 1.4 to 2.0 days. It improved in two-thirds of practices (66% [219/331]), remained the same in 16% (53/331), and worsened in 18% (59/331). The majority of GPs in all four waves, 83% (308/371, 95% CI = 79 to 87), felt that it was worthwhile participating in the collaborative, although one in 12 practices would not recommend it. One-fifth of GPs cited a lack of resources as a constraint, and some expressed concerns about the trade-off between immediate access and continuity of care.*

Conclusion: *Advanced Access helped practices to improve availability of GP appointments, and was well received by the majority of practices.*

Keywords: *access to health care; general practitioner perceptions; primary care.*

D M Pickin, MD, MFPHM, clinical senior lecturer in health services research; A O'Cathain, MA, BSc, MSc, C. Stat, MRC research fellow; F C Sampson, BA, MSc, research fellow; S Dixon, BSc, MSc, senior lecturer in health economics, School of Health and Related Research, University of Sheffield.

Address for correspondence

Dr Mark Pickin, School of Health and Related Research, University of Sheffield, Regent Court, Sheffield S1 4DA. E-mail: d.m.pickin@sheffield.ac.uk

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Introduction

MANAGING demand is an important issue in primary care.[1] Access to primary care is a central thrust of government health policy, with *The NHS plan* setting targets for a maximum 48-hour wait for appointments in general practice.[2] Attempts have been made to improve access using nurse practitioners,[3] telephone consultations, and triage.[4–6] These interventions have sometimes reduced face-to-face contacts with general practitioners (GPs),[4,5] although concerns have been expressed that short-term savings in time might be offset by higher re-consultation rates.[6]

The National Primary Care Collaborative was established in February 2000 with the aim of improving quality and access for patients in primary care. The focus was on three areas of patient care: access to primary care (Advanced Access), secondary prevention of coronary heart disease, and capacity and demand management between primary and secondary care. The sum of £5000 was available for each practice in the collaborative, primarily for attendance at workshops and meetings, to support work in these three areas. Advanced Access is described as practices understanding their pattern of demand, shaping demand through a variety of interventions, balancing appointment capacity with demand, and ensuring robust contingency plans for staff illness and holidays.[7] The collaborative encouraged practices to develop a set of interventions tailored to their own needs that would improve access for patients; for example, introducing telephone consultations for follow-up appointments, or reducing the proportion of appointments that are bookable in advance. The collaborative initially recruited 462 practices in four waves, and the initiative has been promoted nationally.[8]

Adoption of the principles of Advanced Access has been credited with improving access to health care in the United States,[9,10] and its potential has been promoted for primary care in the United Kingdom.[11] However, there is some scepticism about whether this is the right approach,[12,13] with little known about its impact on access or perceptions of its value within primary care in the United Kingdom. Published evidence to date consists of one paper describing seven case studies in the United States.[14] Given the impending national roll out, we undertook a rapid evaluation of Advanced Access to determine its impact on access, factors associated with changes in access, and GPs' views of the process.

Method

Data on availability of appointments

Practices in the collaborative were required to collect monthly data on the amount of time to the third available appointment with GPs. The measure, and how to collect it, is described in detail by the collaborative.[7] During each month,

HOW THIS FITS IN

What do we know?

The National Primary Care Collaborative is promoting Advanced Access as a way of improving access in primary care. To date there have been no published evaluations of Advanced Access in the United Kingdom.

What does this paper add?

Advanced Access helped practices to improve availability of GP appointments, and was well received by the majority of practices. Views and experiences of different patient groups on the impact of Advanced Access are lacking and should be urgently researched.

the measure is taken on 1 day in each week, with the day of week rotated. At noon on the measurement day, the practice appointment system is used to count the number of working days to the third available routine appointment with each GP. The median value is calculated for each week, and the four weekly median scores are averaged at the end of the month. The justification offered by the collaborative for the use of this measure is that it is stable to cancellations. In this paper we refer to the time to the third available appointment with GPs as a measure of availability. These monthly data, held centrally by the collaborative, were made available to us for all 462 practices up to November 2001. The practices were recruited in four waves with 17 months of data available for wave 1 (107 practices); 13 months for wave 2 (113 practices); 8 months for wave 3 (132 practices); and 2 months for wave 4 (110 practices). In view of the short time period of data availability for wave 4 practices, these were excluded from this part of the analysis. A single month's baseline datapoint (prior to any changes) was available for waves 2 and 3. Where it was not available, the first month of data collection was taken as the baseline.

We e-mailed a data collection form to local project managers employed by the collaborative, asking for practice characteristics, types of interventions tried, and the degree to which Advanced Access was implemented. Two reminders were sent.

GPs' views

In January 2002, we sent a postal questionnaire to practice managers to pass on to the GP leading Advanced Access in each of the 462 practices. We designed the questionnaire following interviews with GPs in the collaborative. GPs were asked to agree or disagree on a 5-point Likert scale, with statements about problems with access and participating in the collaborative. Using open questions, they were asked to identify the most and least successful interventions, lessons for other practices, and constraints. These open responses were coded and treated quantitatively. One reminder was sent after 2 weeks.

Analysis

We were interested in whether changes in the availability measure occurred, and therefore the outcome variable was the change in availability, defined as the difference between the mean availability in the last 3 months of data and the baseline availability. Associations between interventions and changes in availability were investigated with regression models adjusted for baseline availability, wave, and practice characteristics. The proportions of GPs strongly agreeing or agreeing with questionnaire statements were calculated with 95% confidence intervals (CIs). The data were analysed using SPSS for Windows.

Results

Representativeness

Data collection forms were returned for 84% (295/352) of practices in waves 1–3. Characteristics of these practices were compared with national figures.[15,16] Practices in the collaborative with completed data collection forms were more likely to be training practices, 49% (141/288, 95% CI = 43 to 55) versus 25%; less likely to serve urban populations, 76% (218/288, 95% CI = 71 to 81) versus 85%; less likely to receive deprivation payments, 61% (180/278, 95% CI = 55 to 67) versus 73%; and more likely to have been fundholders, 67% (189/282, 95% CI = 62 to 72) versus 45%.

Changes in the time to the third appointment with GPs

Complete monthly availability data were available for 331 of the 352 practices in waves 1–3. Half of practices (50% [173/331]) joined the collaborative with the time to the third available appointment of over 2 days. Availability improved in two-thirds of practices (66% [219/331]), remained the same in 16% (53/331), and worsened in 18% (59/331). The mean time to the third available appointment fell by almost half from 3.6 to 1.9 days, difference = 1.7, 95% CI = 1.4 to 2.0 days (Figure 1).

The impact of interventions on the time to the third appointment with GPs

The regression was undertaken on the 286 practices in waves 1–3 with full availability data and a completed data collection form. Some interventions, such as using the telephone for both new and follow-up consultations, and increasing the availability of book-on-the-day appointments by reducing the proportion of pre-bookable appointments, were tried by the majority of practices, whereas others, such as e-mail and group consultations, were tried by few (Table 1). A minority of practices had increased staff to improve access.

Having adjusted for wave and baseline availability, three practice characteristics were independently associated with changes in availability. Practices with fewer female GPs, those not in receipt of deprivation payments, and those with shorter appointment lengths experienced larger reductions in the time to the third available appointment. There was no evidence that previous fundholding status and training status were associated with reductions. Having adjusted for wave, baseline availability, and the three practice characteristics above, the level of implementation of Advanced Access was found to be associated with outcome (Table 1). Practices implementing a larger amount of Advanced Access achieved larger reductions in the time to the third

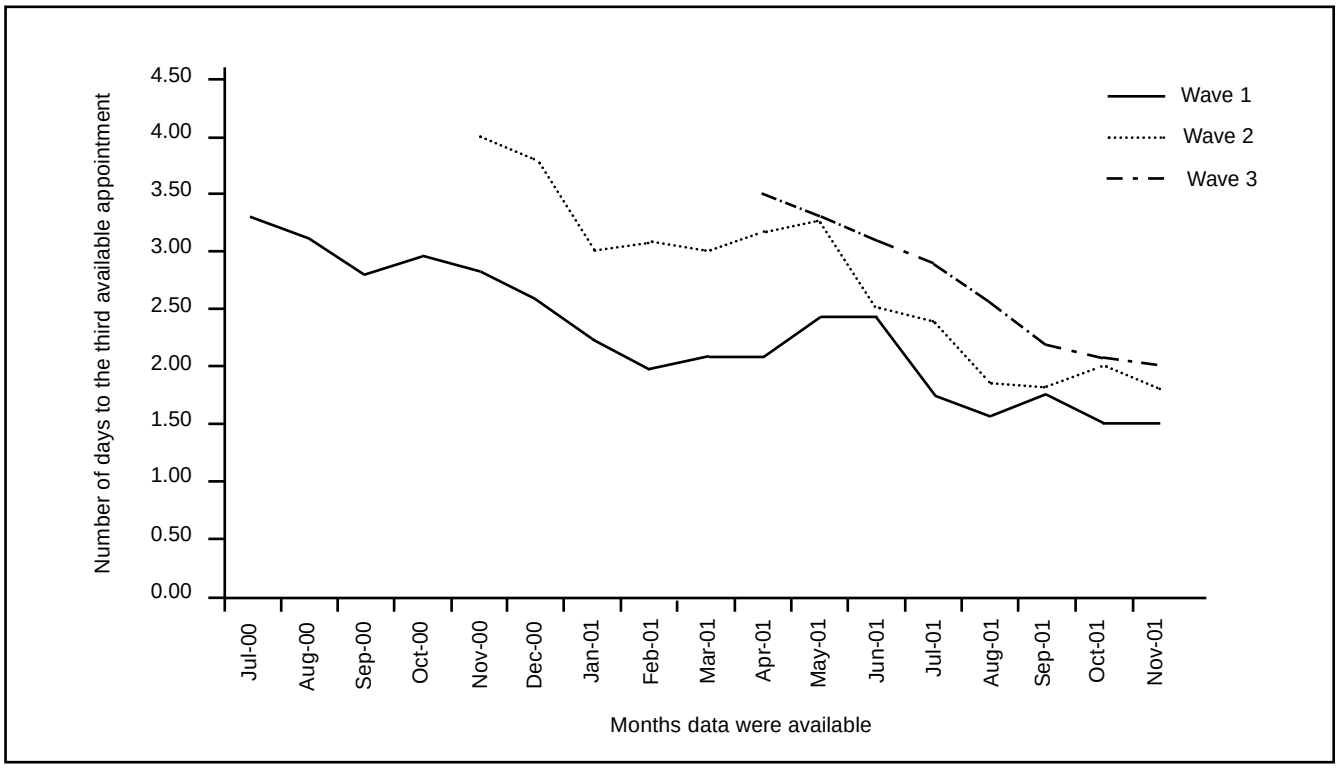

Figure 1. Mean time to third available appointment with a GP, by month and wave.

available appointment. In a univariate analysis, eight interventions were associated with reductions in the time to the third available appointment (Table 1). Surprisingly, staff increases were not found to be associated with changes in availability. Excluding the level of implementation of Advanced Access in order to identify individual interventions associated with success, only three were independently associated with the outcome variable in a multivariate analysis: increasing the proportion of appointments that were bookable only on the day; using telephone consultations for follow-up appointments; and altering skill mix.

GPs' views

The response rate was 80% (371/462). Non-responders had similar mean baseline availability (3.6 versus 3.5) and larger reductions in the time to the third available appointment (2.1 versus 1.6) than responders, although this difference was not statistically significant.

Access. Half of the practices perceived that they had a problem with access prior to joining the collaborative (Table 2). About half of the practices felt that patients waited less time for a GP appointment. Seventy-eight per cent (150/192) of practices that reported improvements in access felt that these would be sustainable. The majority (90%) of GPs felt that the data collected for the collaborative were accurate, although one in seven felt that the measure used was not a useful measure of access.

The collaborative. Eighty-three per cent (95% CI = 79 to 87) of GPs felt that it was worthwhile participating in the collaborative and three-quarters would recommend other practices to join (Table 2). As well as improvements in access, around one-third of GPs reported other benefits including feeling in control of workload, improvements in staff morale, and GPs' perceptions that patient satisfaction had improved. However, 39% of GPs felt that it involved an excessive amount of work. Practices perceiving a problem with access prior to joining were more likely to feel that joining was worthwhile and to reap other benefits (Table 3). One in 12 practices would not recommend other practices to join.

GPs' perceptions of the most successful interventions were generally in agreement with the findings of the regression, that is telephone consultations and making changes to the appointment system (Table 4). Interestingly, telephone consultations and triage were commonly cited as both the most successful and least successful interventions. Lack of resources, lack of time, and resistance from colleagues were cited as constraints by a fifth of GPs. Eight per cent of GPs expressed concerns that making access immediate, or reducing the availability of pre-bookable appointments, might impact adversely on other aspects of primary care, such as continuity of care and seeing the doctor of choice, and on particular groups of patients such as older people, those with chronic illness, and those in employment.

Discussion

Summary of main findings

We found that practices implementing Advanced Access halved their time to the third available appointment and that GPs found membership of the collaborative a worthwhile process. Additional benefits, for a third of GPs, included

improvements in staff morale and an increase in perceived control of workload. Although 39% of GPs had concerns about the amount of work involved, only one in 12 said they would not recommend it to other practices.

Strengths and limitations of the study

This was a rapid evaluation, designed to give timely information prior to the further roll out of Advanced Access. Limitations imposed by the short timescale included our reliance on the data already collected by practices for the collaborative, and the absence of any control practices. Practices in the collaborative were not a random sample of general practices, and may have joined because of perceived problems with access. Ideally, we would have wanted practices to collect baseline data for a longer period prior to attempting interventions. The measure used by the collaborative, the time to the third available appointment, may also be problematic. Where appointments are bookable on the day only, this measure will be recorded as 1 day regardless of the pressure on appointments, with the potential to produce cosmetic reductions. This is more important where the reduction in pre-bookable appointments is large, but we did not collect data on the level of this reduction. Additionally, it could be argued that the time to the third

Table 1. Number (%) of practices attempting to use different interventions, and mean changes to the time to the third available appointment in days associated with different interventions.

Intervention	Attempted to use to improve access total = 286 *n* (%)	Adjusted[a] mean change in availability measured in days (95% CI)	*P*-value
Univariate analysis			
Level of implementation of Advanced Access			
All or most	111 (39)	0.61 (0.31 to 0.91)	0.001
Some	135 (47)		
Little or none	19 (7)		
Missing	21 (7)		
Telephone for follow-up consultations	224 (78)	0.68 (0.22 to 1.15)	0.004
Measures to reduce pre-bookable appointments	200 (70)	0.63 (0.22 to 1.04)	0.003
Group consultations	20 (7)	0.61 (-0.13 to 1.34)	0.106
Backlog clearing	108 (38)	0.57 (0.18 to 0.95)	0.004
Altered skill mix (for example, healthcare assistants undertaking some practice nurse duties)	176 (61)	0.51 (0.13 to 0.90)	0.010
Measures to reduce follow-up appointments	199 (70)	0.50 (0.08 to 0.92)	0.020
Reduction in pre-bookable appointments on Mondays	181 (63)	0.48 (0.08 to 0.87)	0.019
Contingency plans for staff holidays	122 (43)	0.44 (0.07 to 0.81)	0.021
GP triage	115 (41)	0.42 (0.05 to 0.80)	0.027
Increased number of healthcare assistants to improve access	86 (33)	0.37 (-0.28 to 0.76)	0.069
Contingency plans for staff sickness	81 (28)	0.36 (-0.06 to 0.77)	0.093
Redistribution of nurse time	159 (56)	0.29 (-0.09 to 0.67)	0.138
Redistribution of GP time	156 (55)	0.28 (-0.10 to 0.66)	0.144
Measures to promote self care (for example, leaflets)	183 (64)	0.24 (-0.14 to 0.62)	0.224
E-mail consultations	19 (7)	0.21 (-0.54 to 0.96)	0.584
Redirection of workload from GPs	239 (84)	0.19 (-0.35 to 0.73)	0.488
Contingency plans for fluctuations in demand	105 (38)	0.17 (-0.21 to 0.56)	0.375
E-mail prescriptions	42 (16)	0.12 (-0.39 to 0.64)	0.635
Telephone for new consultations	174 (61)	0.11 (-0.28 to 0.50)	0.589
Nurse triage	135 (47)	0.10 (-0.27 to 0.48)	0.589
Protected time to develop services	254 (89)	0.03 (-0.64 to 0.70)	0.925
Increased number of nurses (not nurse practitioners) to improve access	76 (27)	-0.04 (-0.46 to 0.37)	0.837
Increased number of nurse practitioners to improve access	28 (10)	-0.24 (-0.83 to 0.34)	0.410
Increased number of GPs to improve access	36 (13)	-0.32 (-0.87 to 0.23)	0.251
Multivariate analysis			
Reduction in pre-bookable appointments		0.41 (-0.02 to 0.84)	0.061
+ increased use of telephone follow-ups		0.56 (0.10 to 1.02)	0.018
+ altered skill mix		0.44 (0.06 to 0.83)	0.025

[a]Adjusted for baseline access, wave, number of whole time equivalent female GPs, deprivation payment and length of standard appointment.

Table 2. General practitioners' views of access and the collaborative.

	Strongly agree *n* (%)	Agree *n* (%)	Not sure *n* (%)	Disagree *n* (%)	Strongly disagree *n* (%)	Total
Access						
This practice had a problem with access prior to joining the collaborative	59 (16)	138 (37)	37 (10)	94 (25)	43 (12)	371
Since joining the collaborative, patients wait less time for a GP appointment	81 (22)	129 (35)	58 (16)	71 (19)	30(8)	369
Improvements in access we have made to date are likely to be sustainable	66 (19)	163 (46)	91 (26)	20 (5)	13 (4)	353
The waiting time data we collect is accurate	133 (36)	198 (54)	25 (7)	6 (2)	6 (2)	368
'Third available appointment' is a useful measure of access	63 (17)	158 (43)	97 (26)	35 (10)	15 (4)	368
The collaborative						
It involves an excessive amount of work for practice staff	32 (9)	110 (30)	67 (18)	147 (40)	8 (2)	364
I feel more in control of my workload now	20 (5)	115 (31)	105 (29)	105 (29)	22 (6)	367
Staff morale has improved since we joined	26 (7)	106 (29)	133 (36)	92 (25)	10 (3)	367
My GP colleagues are supportive	40 (11)	199 (56)	73 (20)	37 (10)	7 (2)	356
Team working has improved	22 (6)	124 (34)	137 (37)	77 (21)	7 (2)	367
'Did not attends' have been reduced	45 (12)	85 (23)	101 (28)	106 (29)	25 (7)	362
Patients seem to be more satisfied since we joined	23 (6)	96 (26)	146 (40)	81 (22)	19 (5)	365
It has been worthwhile participating in the collaborative	96 (26)	212 (57)	44 (12)	11 (3)	8 (2)	371
I would recommend other practices to join the collaborative	86 (23)	186 (50)	69 (19)	23 (6)	7 (2)	371

available appointment is a practice-based measure of accessibility of practices, rather than a patient-based measure of access as experienced by patients. We do not know of any research demonstrating a relationship between this measure and patients' experiences and views of access. Finally, it is important to consider the costs associated with implementing and maintaining changes in access. We undertook a retrospective cost analysis which was hampered

Table 3. Number (%) of general practitioners strongly agreeing or agreeing with statements about the collaborative by whether they perceived they had a problem with access.

Statement	Perceived problem with access *n*/total (%)	No perceived problem with access *n*/total(%)	*P*-value[a]
Access			
Since joining the collaborative, patients wait less time for a GP appointment	145/195 (74)	65/174 (37)	0.001
Improvements in access we have made to date are likely to be sustainable	131/192 (68)	98/161 (61)	0.003
The waiting time data we collect is accurate	182/197 (92)	149/171 (87)	0.118
'Third available appointment' is a useful measure of access	129/196 (66)	92/172 (53)	0.001
The collaborative			
It involves an excessive amount of work for practice staff	67/195 (34)	75/169 (44)	0.276
I feel more in control of my workload now	94/195 (48)	41/172 (24)	0.001
Staff morale has improved since we joined	94/196 (48)	38/171 (22)	0.001
My GP colleagues are supportive	136/196 (69)	103/160 (64)	0.003
Team working has improved	95/195 (49)	51/172 (30)	0.001
'Did not attends' have reduced	98/192 (51)	32/170 (19)	0.001
Patients seem to be more satisfied since we joined	91/195 (47)	28/170 (16)	0.001
It has been worthwhile participating in the collaborative	175/197 (89)	133/174 (76)	0.001
I would recommend other practices to join the collaborative	150/197 (76)	122/174 (70)	0.094

[a]χ^2 test with 4 degrees of freedom based on five categories of answers to statements cross-tabulated by whether GPs perceived a problem with access or not.

Table 4. GPs' views of the collaborative, based on written comments made by 5% or more of GPs (total = 371).

GP's views	*n* (%)
Most successful interventions	
Telephone consultations	98 (26)
Changing the appointment system	87 (23)
Measuring and matching capacity and demand	62 (17)
Triage	57 (15)
Nurse	35 (9)
GP	12 (3)
Reduction in pre-bookable appointments on Mondays	34 (9)
Nurses' minor illness clinics	23 (6)
Clearing the backlog of booked appointments	20 (5)
Least successful interventions	
Telephone consultations	60 (16)
Triage	38 (10)
Nurse	16 (4)
GP	6 (2)
Lessons for other practices	
Communicate with staff and patients before and during changes	109 (29)
Measure capacity and demand	39 (10)
Make small changes slowly	37 (10)
Use the collaborative PDSA (plan, do, study, act) cycles	20 (5)
Make practice-specific changes	20 (5)
Ensure resources are available	18 (5)
Be prepared to work harder	18 (5)
Plan changes	18 (5)
Barriers and constraints	
Lack of resources	75 (20)
Lack of time to instigate change	74 (20)
Resistance from colleagues	70 (19)
Culture of resistance to change	61 (16)
Staff illness, holidays and shortage	48 (13)
Patient resistance or unhappiness	40 (11)
Volume of demand from patients and other initiatives	31 (8)
Concerns about continuity of care, and access for some groups, for example, those with chronic illness	28 (8)
Need to train staff	17 (5)
Lack of availability of locums	17 (5)

by a lack of reliable cost data.[17] A prospective study of the costs of Advanced Access is essential.

While these limitations need to be addressed in future research in this area, we believe that our findings are valid. The absence of a control group only threatens validity to the extent that there are secular trends in availability. We believe it unlikely that the time to the third available appointment would have been halved in any control practices over this period, especially given Hsu's findings of secular trend in the opposite direction.[18] Many of the limitations were imposed by the short timescale of the evaluation, but we feel it is vital that early independent evidence is available to inform debate about this important national development.

Relationship to other work

Practices reporting a higher level of implementation of Advanced Access achieved larger improvements in the availability measure, supporting the collaborative's promotion of Advanced Access as a package of measures rather than isolated interventions. This is also consistent with the multifaceted approach to improving access advocated elsewhere.[1] There appeared to be no standard, off-the-peg, solution and practices need to consider what will work best for them. Despite this, certain interventions associated with shaping demand appeared to be particularly successful — the shift from pre-bookable appointments to book-on-the-day, telephone consultations, and altering skill mix. The findings on triage were less clear, even though it has been found to improve access elsewhere.[5] Paradoxically, it was cited by GPs as one of the most and as one of the least successful interventions. This may reflect a lack of clarity about the labelling of interventions — similar activity may have been referred to as triage by some practices, and as telephone consultations by others. Lack of conceptual clarity is an issue relevant to other interventions in primary care, such as increasing the role of nurses in primary care consultations, and further efforts are needed to address this.[3]

Implications for future research and policy

These are generally very positive results. However, GPs cited a number of constraints on improving access including lack of resources, lack of time to instigate change, and resistance to change within the practice. Some GPs found participating in the collaborative involved an excessive amount of work for practice staff, as noted elsewhere.[14,19] One constraint, although cited by fewer GPs, nonetheless deserves further discussion. Initiatives to speed up access to primary care may favour patients who seek appointments at short notice, with no preferences for a particular GP or for whether they see a nurse or a doctor. Other groups of patients may prefer to book appointments in advance and see a particular clinician; for example, patients with complex medical problems, where continuity of care is more important.[20,21] Such conditions are more likely in elderly patients who, like commuters and workers, may also be less able to telephone early enough, or persistently enough, to obtain an appointment on the day in a predominantly book-on-the-day appointment system. Personal continuity of care is an important quality issue in primary care [22,23] and is emphasised as important as a means to reducing demand for care.[9] In addition to the time to the third available appointment, practices in the collaborative measured the percentage of patients seen on the day of their choice. As reported elsewhere,[17] this increased over time, suggesting that improvements in the time to the third available appointment were not at the expense of patients being seen on their day of choice, although it is still unknown whether they are at the expense of continuity of care. The right balance between the availability of pre-bookable and book-on-the-day appointments for individual practices remains unclear, and thus is an important question for further research. Additionally, the most important gap in our knowledge in this field concerns patients' views and experiences. There are no published studies available, and the relation-

ship between the time to the third available appointment and patient views is unknown.

The practices in the first four waves of the collaborative were not representative of practices; they were less likely to receive deprivation payments, and practices not in receipt of deprivation payments had larger reductions in the time to the third available appointment. This raises some questions about whether improvements seen here would occur in other practices as the process rolls out. In addition, only half of the practices felt that they had a problem with access prior to joining the collaborative and these were more likely to show improvements and feel positively towards the initiative. Thus, Advanced Access may be more successful when targeted at practices with perceived access problems. It is also worth recognising that a minority of practices will hold strong negative views of the process. Finally, practices implementing Advanced Access should safeguard access for elderly people, those with chronic diseases, and other groups who may value continuity of care and the availability of pre-bookable appointments.

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